WHAT IS CLAIMED IS:

Sub C1

1. A therapeutic composition, comprising:

a) a ~~fusion~~ polypeptide comprising a polypeptide which specifically binds CD38 or a portion thereof linked to a polypeptide which specifically binds DNA or a portion thereof; and

b) a DNA sequence encoding a cytotoxic agent which is operably linked to a cell- or tissue-specific transcriptional unit.

2. The composition of claim 1 wherein the polypeptide which specifically binds CD38 is an antibody.

Sub C2

3. The composition of claim 2 wherein the antibody is obtained from an antibody secreted by hybridoma HB7.

4. The composition of claim 1 wherein the polypeptide which specifically binds DNA is protamine.

5. The composition of claim 1 wherein the cytotoxic agent is diphtheria toxin A chain, a cell suicide protein, Pseudomonas exotoxin, or an enzyme or protein that activates a chemotherapeutic agent.

6. The composition of claim 1 wherein the transcription unit is specific for B cells.

7. The composition of claim 1 wherein the transcription unit is specific for T cells.

8. The composition of claim 1 wherein the transcription unit is specific for myeloid cells.

Sub C3

9. The composition of claim 2 wherein the antibody is a humanized antibody.

10. The composition of claim 1 further comprising a radioisotope linked to the fusion polypeptide.

11. The composition of claim 2 or 9 wherein the antibody is a scFv antibody.

12. An isolated and purified ~~fusion~~ polypeptide comprising at least a portion of a polypeptide that specifically binds CD38 and at least a portion of a polypeptide that specifically binds DNA.

13. A method to inhibit the growth of CD38+ cells, comprising contacting cells *in vitro* with an effective amount of the composition of claim 1.

14. An isolated and purified nucleic acid molecule comprising a nucleic acid segment encoding the ~~fusion~~ polypeptide of claim 12.

15. A method to inhibit or treat multiple myeloma, primary amyloidosis, monoclonal gammopathy, or acute myeloid leukemia, comprising: administering to a mammal in need of said treatment an effective amount of the composition of claim 1.

16. A recombinant DNA molecule which encodes a single chain fusion polypeptide, wherein the recombinant DNA molecule comprises:

a) a DNA sequence that encodes the Fv region of a light chain of an antibody specific for CD38 and the Fv region of a heavy chain of an antibody specific for CD38, wherein the fusion protein binds to $CD38^+$ cells; and

b) a DNA sequence that encodes a polypeptide that specifically binds DNA.

17. A recombinantly produced single chain fusion polypeptide comprising:

a) the Fv region of the light and the heavy chain of a CD38 specific antibody; and

b) a DNA binding polypeptide, wherein the Fv region and the DNA binding polypeptide are recombinantly fused to form a single chain polypeptide that specifically binds $CD38^+$ cells.

18. A pharmaceutical composition comprising a recombinantly produced single chain fusion polypeptide in a concentration sufficient to inhibit tumor cell growth, together with a pharmaceutically acceptable carrier wherein the fusion polypeptide comprises:

a) a single chain Fv region of an antibody, wherein the Fv region comprises the V_H and V_L regions of the antibody; and

b) a DNA binding polypeptide, wherein the Fv region and the DNA binding polypeptide are recombinantly fused to form a single molecule that specifically binds $CD38^+$ cells.